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STITES & HARBISON PLLC 1199 NORTH FAIRFAX STREET SUITE 900 ALEXANDRIA, VA 22314			BODDIE, WILLIAM	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/611,814

Applicant(s)

PRYOR, TIMOTHY R.

Examiner

William L. Boddie

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-10,12-14,16-24,27-33,36,40,41,45,46,54,58-61,64-98 and 101 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 101 is/are allowed.
- 6) ☒ Claim(s) 1,3-10,12-14,16-24,27-33,36,40,41,45,46,54,58-61 and 64-98 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. In an amendment dated, October 31<sup>st</sup>, 2007 the Applicant amended claims 1, 54, cancelled claims 62-63, 99-100, and added new claim 101. Currently claims 1, 3-10, 12-14, 16-24, 27-33, 36, 40-41, 45-46, 54, 58-61, 64-98 and 101 are pending.

#### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1, 3-10, 12-14, 16-24, 27-33, 36, 40-41, 45-46, 54, and 58-100 have been fully considered but they are not persuasive.

3. On page 2 of the remarks, the Applicant argues that Rekimoto's physical control details are not mounted to a screen.

The Examiner must respectfully disagree. First it is important to note that the broadest reasonable definition of "mounted" does not seem to require that the item be fixed to one position. An item may be seen to be simply mounted yet still be removable. Furthermore, even if Rekimoto does not teach mounting the physical control details, Jaeger absolutely discloses a fixedly mounted control knob in figure 21.

4. On pages 2-3 of the remarks, the Applicant argues that Rekimoto does not disclose controlling anything other than the projected image.

The Examiner must respectfully disagree. The Applicant is pointed to the figure 18 embodiment which details the display of an image of a TV remote control (RMD), and whereupon touching the images of buttons controls the functions of the connected television (30 in fig. 18).

5. On page 2 of the remarks, the Applicant argues that the inventions of Jaeger and Rekimoto are uncombinable. Specifically the Applicant argues the sensing mechanism of Jaeger would block the projection screen of Rekimoto.

The Examiner must respectfully disagree that Rekimoto and Jaeger are uncombinable. The nature of the combination would seem to obviously overcome the issue posed by the Applicant. The combination is not that the inclusion of the entire electro-optical sensing mechanism of Jaeger with the sensing mechanism of Rekimoto. What is contemplated is inclusion of fixedly mounted rotatable control knobs on the screen and application of the device in a vehicle. In other words, Jaeger discloses that the position of a knob can be determined through electro-optical reflection. The combination is taking that teaching and placing the knob on the screen of Rekimoto and determining the position of the knob through electro-optical reflection as currently accomplished by Rekimoto.

6. On page 3 of the remarks, the Applicant further argues that Jaeger does not disclose control of audio, climate control, or navigational guidance systems and that any display of such functions are provided on a separate computer, as claimed in claim 62-63.

The Examiner must respectfully disagree. Jaeger clearly contemplates use of the device in a car radio in column 15, lines 41-55. Additionally route directions and the radio functions are also disclosed as being displayed on the in-car display (specifically note col. 16, lines 51-52; "for subsequent display at the display 131"). From these disclosures by Jaeger it seems clear that Jaeger contemplated the display of at least audio and guidance functionality on the in-dash display.

7. Therefore as shown above the rejections are seen as sufficient and are thus maintained

***Allowable Subject Matter***

***Claim Objections***

9. Claims 22 and 81 are objected to because of the following informalities: both claims currently state "a image modulating type." This is incorrect grammatically, and appropriate correction is required. **Specifically, the article "a" should be replaced with "an."**

***Claim Rejections - 35 USC § 112***

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claim 1 recites the limitation "the electro-optical sensing means" in the next to last line. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1, 3-4, 6-10, 12, 20, 23-24, 28, 30, 33, 40-41, 46, 54, 58-61, 64-65, 67-72, 79, 82-83, 85-86, 89, 91-92 and 94-98 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rekimoto et al. (US 6,414,672) in view of Jaeger et al. (US 5,572,239).

**With respect to claim 1,** Rekimoto discloses, a reconfigurable instrument panel, said panel comprising:

a computer terminal display (fig. 18) including a rear projection display screen (2b in fig. 18);

a plurality of physical control details (tableware for example in fig. 18) capable of movement between a plurality of positions and mounted in front of said screen (clear from fig. 18) said display screen comprising part of a display system capable of providing, on said screen, different configurable images associated with the plurality of physical control details, said images including at least two of an audio image, a climate control image, and a navigational guidance image (Rekimoto is clearly *capable* of providing audio, climate and navigational images on the screen);

an electro-optical sensing system (3 and 4 in fig. 18), located behind said screen and capable of sensing the plurality of positions of each of said plurality of physical control details (col. 20, lines 1-9) and having a field of view which encompasses said plurality of physical control details (clear from fig. 18), for sensing a current position of at least one of said plurality of physical control details based on reflected light (col. 19, lines 60-64); and

a computer connected to said electro-optical sensing system (6 in fig. 18), to determine, from the current position of the at least one physical control detail sensed by the electro-optical sensing means, at least one input to control at least one function of the computer (col. 20, lines 7-22).

Rekimoto also contemplates the use of the device in various other apparatuses (col. 19, lines 46-50).

Rekimoto does not expressly disclose, that the device is used in a vehicle instrument panel, that the physical control details are used to control at least one

function of the vehicle, or that at least one of said physical control details comprises a rotatable control knob.

Jaeger discloses, a reconfigurable instrument panel display for a vehicle (note fig. 18a-c which Jaeger discloses are automobile radios) comprising:

a plurality of physical details (note the two knobs in figs. 18a-18c) mounted in front of a display screen (154 in fig. 21) and at least one of said physical control details comprises a rotatable control knob (153 in fig. 21),

an electro-optical sensing system (164, 166, 178 etc in fig. 21), located behind said screen (col. 17, lines 11-15) and capable of sensing a plurality of positions of each of said plurality of physical control details (col. 17, lines 50-61 for example) and determining the desired inputs from the sensed control positions for controlling a car radio (col. 15, lines 41-55; col. 19, lines 7-12 for example).

Rekimoto and Jaeger are analogous art because they are from the same field of endeavor namely, display devices with input means included within the display, position of said input means being determined infrared light reflection.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the invention of Rekimoto in a car radio and using the fixedly mounted rotatable control knob to control the radio, as taught by Jaeger.

The motivation for doing so would have been to present the familiar feeling of pushing and turning knobs to operate a device (Jaeger; col. 2, lines 5-11).

**With respect to claim 3**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above), wherein said computer controls said display as a result of data inputted to said computer (see above).

Rekimoto further discloses, wherein said computer controls said display as a result of data inputted to said computer from an external source (Rekimoto discloses the user interacting with the computer. In this case the user is the external source inputting data by touching the screen).

**With respect to claim 4**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above)

Rekimoto further discloses, wherein said electro-optical sensing system is comprised by a TV camera (4 in fig. 18 and col. 3, lines 63-64, while Rekimoto does not call these video cameras "tv cameras", however Rekimoto's cameras are within the scope of tv cameras).

**With respect to claim 6**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Jaeger further discloses wherein said computer additionally controls a desired function (col. 18, lines 20-24, microprocessor is understood to be a computer. Jaeger discloses that a microprocessor controls the functions).

**With respect to claim 7**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1(see above).

Jaeger further discloses wherein at least one of said control details is a knob (153 in fig. 21).

**With respect to claim 8**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Jaeger further discloses, wherein absolute position of said control detail is determined (col. 19, lines 7-12; Jaeger stores the angular position of the knob)



**With respect to claim 9**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above)

Rekimoto further discloses, including sensing of touch position on said screen (col. 19, lines 8-14 for example).

**With respect to claim 10**, Rekimoto and Jaeger disclose, an instrument panel according to claim 9 (see above)

Rekimoto further discloses, wherein said touch sensing is also achieved electro-optically (col. 19, lines 8-22 for example).

**With respect to claim 12**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Jaeger further discloses, wherein a datum (191 in fig. 26) on said physical control detail located on the users side of said screen is sensed (also see fig. 22).

**With respect to claim 20**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1.

Jaeger further discloses, wherein at least one of said physical control details comprises one of a slider and a dial (153 in fig. 21).

**With respect to claim 23**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Jaeger further discloses wherein said plurality of physical control details comprises, two knobs spaced horizontally in front of said screen (clear from figs. 8a-c).

**With respect to claim 24**, Rekimoto and Jaeger disclose, an instrument panel according to claim 23 (see above).

Jaeger further discloses, wherein a first displayed image on said screen corresponds to a radio configured around said two knobs, and said radio image is later reconfigured to another function (col. 16, lines 34-52).

**With respect to claim 28**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Rekimoto further discloses, wherein said screen is curvilinear (fig. 15).

**With respect to claim 30**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Rekimoto further discloses, wherein said display screen has an area of at least ninety square inches (should be clear from fig. 18, for example)

**With respect to claim 33**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Rekimoto further discloses, wherein video images are displayed on an upper portion of said display (fig. 16 for example, shows video images displayed on an upper portion of the display).

**With respect to claim 40**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Rekimoto does not expressly disclose, that the data displayed on said screen is comprised of labels and other function related data.

Jaeger discloses, wherein data displayed on said display screen is comprised of labels and other data relating to the function of at least one of said plurality of physical control details (note fig. 1 and the labels displayed on the flat panel).

At the time of the invention it would have been obvious to one of ordinary skill in the art to display labels and other function related data on the screen, as taught by Jaeger.

The benefit of doing so would have been the well-known advantage of increased usability of the device and informing the user of the present conditions of the apparatus being operated.

**With respect to claim 41,** Rekimoto and Jaeger disclose, an instrument panel according to claim 33 (see above).

Rekimoto further discloses, the user interacting with the computer and acknowledging data presented (fig. 5 for example).

**With respect to claim 46,** Rekimoto and Jaeger disclose, an instrument panel according to claim 9 (see above).

Rekimoto further discloses, wherein data to be acted on by touch sensing is projected on said screen under control of said computer (6 in fig. 18; clear from fig. 2).

**With respect to claim 54,** Rekimoto discloses, a method for controlling reconfigurable display panel, said panel comprising:

using an electro-optical sensing means (3 and 4 in fig. 18) for sensing a current position of at least one of a plurality of physical control details (tableware for example in fig. 18) capable of movement between a plurality of positions (clear from fig. 18) and located in front of a rear projection screen (2b in fig. 18) of a reconfigurable instrument panel display (1E in fig. 18), and wherein said display screen comprises part of a display system capable of providing, on said display screen, different reconfigurable images associated with the plurality of said control details, said images including at

Art Unit: 2629

least two of an audio image, a climate control image, and a navigational guidance image (Rekimoto is clearly *capable* of providing audio, climate and navigational images on the screen), and wherein the electro-optical sensing means is capable of sensing the positions of each of said plurality of physical control details (col. 20, lines 1-9), has a field of view which encompasses each of said plurality of physical control details (clear from fig. 18), and is located behind the screen (clear from fig. 18), wherein the current position of the at least one of said plurality of physical control details is sensed based on reflected light (col. 19, lines 60-64), and wherein said display is controlled by a computer (6 in fig. 18); and

using the computer in processing data from said electro-optical sensing means to determine the current position of the at least one of the plurality of physical control details (6 in fig. 3, for example) and to control at least one function of the computer based on the current position of the at least one of the plurality of physical control details determined by the computer (col. 20, lines 7-22).

Rekimoto does not expressly disclose, that the device is used in a vehicle instrument panel, that the physical control details are used to control at least one function of the vehicle, nor that at least one of said plurality of physical control details comprises a rotatable control knob.

Jaeger discloses, a reconfigurable instrument panel display for a vehicle (note fig. 18a-c which Jaeger discloses are automobile radios) comprising:

a plurality of physical details (note the two knobs in figs. 18a-18c) mounted in front of a display screen (154 in fig. 21), wherein at least one of said plurality of physical control details comprise a rotatable control knob (153 in fig. 21),

an electro-optical sensing system (164, 166, 178 etc in fig. 21), located behind said screen (col. 17, lines 11-15) and capable of sensing a plurality of positions of each of said plurality of physical control details (col. 17, lines 50-61 for example) and determining the desired inputs from the sensed control positions for controlling a car radio (col. 15, lines 41-55; col. 19, lines 7-12 for example).

Rekimoto and Jaeger are analogous art because they are from the same field of endeavor namely, display devices with input means included within the display, position of said input means being determined infrared light reflection.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the invention of Rekimoto in a car radio and using the fixedly mounted knobs to control the radio, as taught by Jaeger.

The motivation for doing so would have been to present the familiar feeling of pushing and turning knobs to operate a device (Jaeger; col. 2, lines 5-11).

**With respect to claim 58**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Rekimoto further discloses, wherein at least a portion of said screen is non-flat (fig. 15).

**With respect to claim 59**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Rekimoto further discloses, touch sensing means for sensing xy touch position of a finger of a user on at least a portion of said display screen (col. 19, lines 22-32).

**With respect to claim 60**, as claim 60 is sufficiently identical to the previously rejected claim 10, claim 60 is rejected on the same merits shown above in the rejection of claim 10.

**With respect to claim 61**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Jaeger further discloses, wherein at least one of said physical control details comprises a switch (fig. 20).

**With respect to claims 64-72, 79, 81-83, 85-86, 89, 91-92, 94-98**, these claims are merely method versions of claims, 3-10, 12, 20, 22-24, 28, 30, 33, 40-41, 46, 54 and 58-61, respectively. As such claims 64-72, 79, 81-83, 85-86, 89, 91-92 and 94-98 are rejected on the same merits shown above in the rejection of the identical apparatus version of the claim.

14. Claims 5, 22, 66 and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rekimoto et al. (US 6,414,672) in view of Jaeger et al. (US 5,572,239) and further in view of Fujimoto et al. (US 6,061,177).

**With respect to claim 5**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Rekimoto further discloses, wherein said electro-optical sensing system is comprised by an optical sensor (4 in fig. 18) compactly associated with the projector (5 in fig. 18).

Neither Jaeger nor Rekimoto not expressly disclose that the optical sensor is incorporated into the projector.

Fujimoto discloses, a reconfigurable instrument panel wherein an optical sensor and projector are incorporated into one another (In the embodiment shown in fig. 5, the camera and projector are arranged to be more compact. It is clear that the camera could be incorporated into the projector in this embodiment. Note col. 9, lines 56-59.)

Rekimoto, Fujimoto and Jaeger are analogous art because they are from the same field of endeavor namely, display devices with input means included within the display, position of said input means being determined electro-optical sensing means.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to comprise the electro-optical system, of Rekimoto and Jaeger, of an optical sensor and a projector incorporated together as taught by Fujimoto.

The motivation for doing so would have been to make the apparatus as compact and small as possible (Fujimoto, col. 9, lines 28-30).

**With respect to claim 22,** Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Neither Jaeger nor Rekimoto not expressly disclose that the projector is an image modulating type.

Fujimoto discloses, a reconfigurable instrument panel comprising projection means (17 in fig. 2) that are an image modulating type, specifically DLP (col. 6, lines 60-62).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the DLP projector of Fujimoto in place of the projector of Rekimoto and Jaeger.

The motivation for doing so would have been to make the apparatus as compact and small as possible (Fujimoto, col. 9, lines 28-30), as it is well known in the art that DLP projectors offer a more compact design.

**With respect to claims 66 and 81**, these claims are merely method versions of claims, 5 and 22, respectively. As such claims 66 and 81 are rejected on the same merits shown above in the rejection of the identical apparatus version of the claim.

15. Claims 13 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rekimoto et al. (US 6,414,672) in view of Jaeger et al. (US 5,572,239) and further in view of Bergman et al. (US 5,859,631).

**With respect to claim 13**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Neither Rekimoto nor Jaeger expressly disclose, wherein a datum is sensed on a member related to the current position of said at least one physical control detail is located on the projector side of said screen.

Bergman discloses, wherein a datum (30 and 32 in fig. 1 for example) is sensed electrically on a member (20 in fig. 1) related to the current position of at least one physical control detail (10 in fig. 1) is located on the backside of a screen (2 in fig. 1).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to include the grayscale dial of Rekimoto and Jaeger on the projector side of the screen as shown by Bergman.

The motivation for doing so would have been to ensure accurate imaging of the grayscale wheel of Jaeger by removing any screens or layers which might affect the transparency of the device (Bergman; col. 3, lines 25-28).



**With respect to claim 73**, this claim is merely a method version of claim 13. As such claim 73 is rejected on the same merits shown above in the rejection of the identical apparatus version of the claim.

16. Claims 14 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rekimoto et al. (US 6,414,672) in view of Jaeger et al. (US 5,572,239) and further in view of Levin et al. (US 6,154,201).

**With respect to claim 14**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Rekimoto and Jaeger do not expressly disclose, wherein force feedback is provided to the user as a result of said sensed control detail or touch position.

Rekimoto discloses, wherein force feedback (col. 2 lines 1-3) is provided to the user as a result of said sensed control detail (col. 2 lines 66-67 and col. 3 lines 1) or touch position.

Rekimoto, Jaeger, and Levin are analogous art because they are from the same field of endeavor, namely touch-based input devices.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to include force feedback functionality in the physical control features of the claim 1 invention disclosed by Rekimoto and Jaeger.

The motivation for doing so would have been to provide physical sensations to the user manipulating the knob (Levin, col. 1, lines 35-36).

**With respect to claim 74**, this claim is merely a method version of claim 14. As such claim 74 is rejected on the same merits shown above in the rejection of the identical apparatus version of the claim.

17. Claims 16-17 and 75-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rekimoto et al. (US 6,414,672) in view of Jaeger et al. (US 5,572,239) and further in view of Cragun et al. (US 5,412,189).

**With respect to claim 16**, Rekimoto and Jaeger disclose, an apparatus according to claim 1 (see above).

Rekimoto and Jaeger do not expressly disclose, wherein said screen incorporates at least one relief feature.

Cragun discloses, relief features (i.e. tactile information) on a touch screen (col. 1, lines 54-57).

Rekimoto, Jaeger, and Cragun are all analogous art because they are from the same field of endeavor, namely touch screen technology.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to include relief features on the projection and sensing system disclosed by Rekimoto and Jaeger.

The motivation for doing so would have been to allow visually impaired users to also use the device (Cragun, col. 1, lines 43-45).

**With respect to claim 17**, Rekimoto, Jaeger, and Cragun disclose, an apparatus according to claim 16 (see above).

Cragun further discloses, wherein said relief feature does not unduly disrupt images projected on said screen (col. 3, lines 23-28).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to construct the relief features as transparent as possible.

The motivation for doing so would have been decrease, both, lens effects and interference with visual information (col. 3, lines 25-28).

**With respect to claims 75-76**, these claims are merely method versions of claims 16-17, respectively. As such claims 75-76 are rejected on the same merits shown above in the rejection of the identical apparatus version of the claim.

18. Claims 18 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rekimoto et al. (US 6,414,672) in view of Jaeger et al. (US 5,572,239) and further in view of Villalobos et al. (US 4,644,326).

**With respect to claim 18**, Rekimoto and Jaeger disclose, an apparatus according to claim 1 (see above)

Rekimoto and Jaeger do not expressly disclose wherein said physical control detail is transparent.

Villalobos discloses, wherein said physical control detail is transparent (36 in fig. 1 and col. 8, lines 66-68 and col. 9, lines 1-2).

Villalobos, Rekimoto, and Jaeger are all analogous art because they are from the same field of endeavor namely input panels.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to make the control features of Rekimoto and Jaeger transparent as disclosed by Villalobos.

The motivation for doing so would have been to allow images to be displayed on/through the control details.

**With respect to claim 77**, this claim is merely a method version of claim 18. As such claim 77 is rejected on the same merits shown above in the rejection of the identical apparatus version of the claim.

19. Claims 19 and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rekimoto et al. (US 6,414,672) in view of Jaeger et al. (US 5,572,239) and further in view of Serras-Paulet et al. (US 4,303,856).

**With respect to claim 19**, Rekimoto and Jaeger disclose, an apparatus according to claim 1 (see above).

Rekimoto and Jaeger do not expressly disclose, wherein said physical control detail has an opening through which said screen may be viewed.

Serras-Paulet discloses, wherein said physical control detail (4-6, 9 in fig. 1) has an opening (20 in fig. 1) through which said screen (12 in fig. 1) may be viewed.

Serras-Paulet, Rekimoto, and Jaeger are all analogous art because they are from the same field of endeavor illuminated input devices.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to include an opening, taught by Serras-Paulet, in the control detail, of Rekimoto and Jaeger.

The motivation for doing so would have been to illuminate the control detail (Serras-Paulet, col. 4, lines 47-50)

**With respect to claim 78**, this claim is merely a method version of claim 19. As such claim 78 is rejected on the same merits shown above in the rejection of the identical apparatus version of the claim.

20. Claims 21 and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rekimoto et al. (US 6,414,672) in view of Jaeger et al. (US 5,572,239) and further in view of Wellner (US 5,511,148).

**With respect to claim 21**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Rekimoto and Jaeger do not expressly disclose wherein said projection means is a flying spot scanning type.

Wellner discloses flying spot scanning type projection means (col. 1, lines 50-54).

Wellner, Rekimoto, and Jaeger are all analogous art because they are from the same field of endeavor, namely display peripheral interface input devices.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to develop the projection means, of Rekimoto and Jaeger, as a flying spot scanning type, disclosed by Wellner.

The motivation for doing so would have been to allow projection of a document-sized image onto a work surface (Wellner, col. 1, lines 54-56) and to allow the user to interact with it.

**With respect to claim 80**, this claim is merely a method version of claim 21. As such claim 80 is rejected on the same merits shown above in the rejection of the identical apparatus version of the claim.

21. Claims 27, 31, 45, 84, 87 and 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rekimoto et al. (US 6,414,672) in view of Jaeger et al. (US 5,572,239) and further in view of Ames et al. (US 4,787,040).

**With respect to claim 27**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Neither Rekimoto nor Jaeger expressly disclose, wherein said display is located in the center stack of said vehicle.

Ames discloses installing a CRT touch screen in the center stack of a vehicle (36 in fig. 2)

Rekimoto, Jaeger and Ames are analogous art because they are from the same field of endeavor, namely computer controlled displays with touch screen technology.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to locate the display, taught by Jaeger and Rekimoto, in the center stack of a vehicle as disclosed by Ames.

The motivation for doing so would have been that this is the typical location for control over additional functions of a car, such as radio and climate control.

**With respect to claim 31**, Rekimoto and Jaeger disclose, an instrument panel according to claim 25 (see above).

Neither Rekimoto nor Jaeger expressly disclose, that the display screen is located in the center stack of said vehicle and extends toward the steering wheel of said vehicle.

Ames discloses, locating a CRT display in the center stack of said vehicle and extends toward the steering wheel of said vehicle (note the location of 36 in fig. 2).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to locate the display, taught by Jaeger and Rekimoto, in the center stack of a vehicle extending towards the steering wheel as disclosed by Ames.

The motivation for doing so would have been that this is the typical location for control over additional functions of a car, such as radio and climate control.

**With respect to claim 45**, Rekimoto and Jaeger discloses, an apparatus according to claim 1 (see above).

Rekimoto and Jaeger do not expressly disclose wherein said computer is further used to process data from other electro-optical systems within the vehicle.

Ames discloses a computer (34 in fig. 3) that processes data for both the user-input touch-screen (36 in fig. 3) as well as data from a CD player (40 in fig. 3).

At the time of the invention it would have been obvious to enable the computer, of Rekimoto and Jaeger, to communicate with other systems in the vehicle.

The motivation for doing so would have been to simplify the operation of the vehicle by limiting the different panels that the user must use to operate all the functions of the vehicle.

**With respect to claims 84, 87 and 93**, these claims are merely method versions of claims 27, 31 and 45, respectively. As such claims 84, 87 and 93 are rejected on the same merits shown above in the rejection of the identical apparatus version of the claim.

22. Claims 29, 32 and 88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rekimoto et al. (US 6,414,672) in view of Jaeger (US 5,572,239; hereinafter Jaeger-'239) and further in view of Jaeger (US 5,936,613; hereinafter Jaeger-'613).

**With respect to claim 29** Rekimoto and Jaeger-'239 disclose, an instrument panel according to claim 1 (see above).

Neither Rekimoto nor Jaeger-'239 expressly disclose wherein said screen is irregular.

Jaeger-'613 discloses wherein said screen is irregular (col. 25, lines 60-65).

Rekimoto, Jaeger-'239 and Jaeger-'613 are analogous art because they are from the same field of endeavor namely, display devices with input means included within the display, position of said input means being determined electro-optically.

At the time of the invention it would have been obvious to one of ordinary skill in the art to construct the screen of Rekimoto and Jaeger-'239 in a flexible manner allowing irregular shapes, taught by Jaeger-'613.

The motivation for doing so would have been to allow the inputs to be situated in a more ergonomic position for the user, such as a convex shape.

**With respect to claim 32**, Rekimoto and Jaeger-'239 disclose, an instrument panel according to claim 1 (see above).

Neither Rekimoto nor Jaeger-'239 expressly disclose, wherein said display screen is made of plastic.

Jaeger-'613 discloses wherein said display screen is made of plastic (col. 8, lines 44-47).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to make the display screen out of plastic.

The motivation for doing so would have been due to the durability of plastic.

**With respect to claim 88**, these claims are merely method versions of claim 32. As such claim 88 is rejected on the same merits shown above in the rejection of the identical apparatus version of the claim.



23. Claims 36 and 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rekimoto et al. (US 6,414,672) in view of Jaeger et al. (US 5,572,239) and further in view of Yamaguchi (US 6,441,807).

**With respect to claim 36**, Rekimoto and Jaeger disclose, an instrument panel according to claim 1 (see above).

Neither Rekimoto nor Jaeger expressly disclose, wherein said screen is easily interchanged.

Yamaguchi discloses an interchangeable screen (22 and 21 in fig. 2) for a touch screen unit (10 in fig. 2) with projector input means (106 in fig. 12).

Yamaguchi, Rekimoto and Jaeger are analogous art because they are from the same field of endeavor, display devices with input means included within the display, position of said input means being determined electro-optically.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine the interchangeable screens of Yamaguchi with the plurality of control features of Jaeger and Rekimoto.

The motivation for doing so would have been to allow more flexibility of uses for the users (for example sheet 23 in fig. 3).

**With respect to claim 90**, this claim is a merely method version of claim 36. As such claim 90 is rejected on the same merits shown above in the rejection of the identical apparatus version of the claim.

### ***Conclusion***

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William L. Boddie whose telephone number is (571)

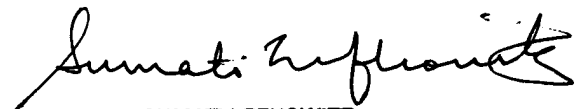
Art Unit: 2629

272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wlb  
1/16/08



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